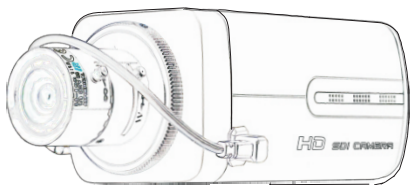


User Manual of SDI Box Camera



Thank you for purchasing our product. This Manual is only applicable to SDI box cameras. There may be several technically incorrect places or printing errors in this manual. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual. The content is subject to change without notice.

Safety Instructions

Before using the product, please read this manual carefully to ensure that user can use the product correctly to avoid danger or property loss. Please store this instruction manual in a safe place for future reference.



Warning

Input voltage should meet both the SELV(Safety Extra Low Voltage) and the Limited Power Source with DC 12V. Please refer to technical specifications for detail information.

- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not be responsible for any problems caused by unauthorized repair or maintenance.)
- Keep away from liquid while in use.
- In the use of the product, you must be strict compliance with the electrical safety regulations of the nation and region.

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When the product is mounted on wall or ceiling, the device shall be firmly fixed.



Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- If cleaning is necessary, please use clean cloth to wipe it gently. If the device will not be used for a long time, please cover the lens cap to protect the device from dirt.
- Do not aim the camera at the sun or extra bright place. A blooming or smear may occur otherwise (which is not a malfunction however), and the endurance of the device will be affected at the same time.
- The device may be burned out by a laser beam, so when any laser equipment is in use, make sure that the surface of the device will not be exposed to the laser beam.
- To avoid heat accumulation, good ventilation is required for operating environment.

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- Do not place the camera in extremely hot, cold (the operating temperature shall be $-10^{\circ}\text{C}\sim+50^{\circ}\text{C}$), dusty or damp locations, and do not expose it to high electromagnetism radiation.
- While on a delivery, the camera shall be packed in its original packing, or packing of the same texture.
- A few parts of the device shall be replaced regularly according to their average enduring time. Regular checking is recommended for all users.

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1 Introduction

This series of the camera adopt the latest 1080P CMOS sensor of Panasonic and support 1080P real-time image capture and transmission with SDI video output port.

1.1 Package Content

The pictures below are only for reference. Please take the real object as standard.

Device	User Manual	Terminal block	Mounting block
			

1.2 Main Features

★ High Resolution and sensibility

- 1080P real-time image with high definition and good color reproduction. The sensibility is up to 0.001LUX due to the installation of the high quality of the built-in removable optical filter.

★ HD-SDI video output

★ High Light Control (HLC)

• Mask and compensate the high light areas so as to make right exposure selection.

★ DNR

• Under low illumination condition, user can reduce noise from brightness and color signal to save a lot of storage room.

★ OSD

• The setup menu clearly displays the functions and features of the camera and 8 languages can be selected. It is easy for users to set up the corresponding items.

★ ICR Switch

• The camera provides two operation modes: color and B&W. User can increase sensitivity in low light conditions (night) by switch to B&W mode. Color mode is preferred in normal lighting condition (Day).

★ Privacy Masking

• When there are not necessary for some area to display in the screen, user can mask this area.

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★ Backlight Compensation (BLC)

•When the back of the captured object is bright, user can set up backlight compensation for the captured object to make it more clearer.

★Motion Detection

•When the camera captures the moving object in the detection area, it will send signal. So it is easy for users to monitor the live.

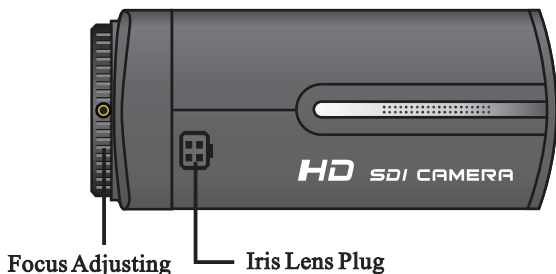
1.3 Rear Panel Instruction

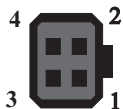


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Number	Description
1	Direction button. Change direction to select item.
2	Enter button. Confirm selection.
3	Video out port. Connect to monitor.
4	Power indicator. When power supply is normal, the light is red.
5	Alarm out port. Connect to external alarm.
	Power input. Support DC12V or AC24V.

1.4 Side Panel Instruction





	DC
1	Damp-
2	Damp+
3	Driver +
4	Driver-

1. Focus Adjusting: When it still fails to realize focusing after having confirmed the correct lens interface, the back focus adjustment may be required. Operate the following steps: tighten the lens firstly and then loose the fixed back focus ring; rotate the lens slowly until the video image turns to be clear, and finally tighten and lock the back focus ring.

2. Iris Lens Plug: The camera provides an iris lens plug in negative pattern with four square holes and the definition of pins is shown above. The interface of DC drive auto iris adopts four pins: Damp+, Damp-, Drive+, Drive-.

2 Operation Instruction

2.1 Power On/Off

Before starting, connect with the power cables and video cables. Please make sure all the connection is good. After that,

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the system will start. Then press the OK button to pop up the setup menu.

Plug out the power cable and then the system will shut down immediately.

2.2 Basic Operating Instruction

SETUP	
LENS	MANUAL
EXPOSURE	←↓
WHITE BAL	ATW
DAY&NIGHT	←↓
SPECIAL	←↓
IMAGE ADJUST	←↓
RESET	←↓

When entering into the setup menu, user can see the picture as shown above. ←↓ means that there are submenus. User can select and confirm the item by pressing the direction button and OK button.

Press the up or down button to select the item on the left column. Push the left or right to select the item on the right

column. Press the enter button to confirm the selection and enter into the submenu interface.

2.3 Lens Setup

Support manual IRIS and DC lens. Please setup according to the use of lens.

User can select the lens type by pressing right button.

2.4 Exposure

Exposure setup includes: Shutter, AGC, Sens-up, WDR, Defog and Backlight.

Shutter: Options include auto, 1/3, 1/60, FLK, 1/250, 1/500, 1/1000, x 2.

AGC: When the light is insufficient, press Left/Right button to setup its level. The default level is 6. Please increase or decrease the level as required.

Sens-up: Extend the exposure time of camera. The higher the time is, the lower the frame is. The shadow will be longer under the dark condition. Please select times by pressing right button as needed.

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WDR: Lighten the dark area and control the highlight area. There are four options: low, middle, high, off.

Defog: In foggy weather, you can setup this function to see the object behind fog clearly. There are four options: low, middle, high, off.

Backlight: You can select OFF, BLC or HSBLIC by pressing right button.

If OFF is selected, the system will not compensate the image. If BLC is selected, it will enhance the brightness of image to satisfy the monitor effect.

To enter into the submenu of BLC, press Enter button. You can setup GAIN, AREA and DEFAULT.

Gain: The higher the level is, the brighter the image is.

Area: Select Area and press right button to select On/Off. When selecting on, the area position and size can be setup. Press direction button to set the position of BLC area. After that, press Enter button to setup the area size. Press Up or Left to reduce the area, but press Down or Right to enlarge the area.

If parameters of BLC setup is out of order, please select Default and press Enter button to reset settings.

If HSBLIC is selected, the high brightness will be restrained

and the low brightness will be enhanced at the same time. As a result, the image in a certain area will be exposed properly. (Please use the fixed IRIS Lens). This function can be used to shoot license plate number.

Select HSBLC and press Enter button to go into its submenu.

Select: There are four areas. Please press direction button to select.

Display: Display the HSBLC areas. There are four areas. Press Enter button to setup the position and size.

Level: Press Left or Right to increase or decrease.

Mode: There are two modes: All Day and night.

Black Mask: Mask the highlight area.

Default: Reset the setup of HSBLC to the default setting.

Select Return and press Enter button to return to the previous interface. Select Return, press right button and choose exit to exit Menu.

2. 5 White Balance

Select WHITE BAL and press left or right button to choose White balance mode including ATW, AWC→SET, Indoor Outdoor and Manual,

ATW: In this mode, the camera will constantly monitor the

color temperature among about 2500~ 9500K of color temp and adjust white balance automatically. This mode is prior to other modes.

AWC → SET: Select it and press Enter button to go into the lock mode of white balance. Now the camera locks the reference value of red and blue under the current color temperature and stops monitoring color temperature.

Indoor: Indoor white balance mode.

Outdoor: Outdoor white balance mode.

Manual: When the camera is used in the environment with a certain unchangeable light source, user can use this mode. Select this mode and press Enter button to setup. User can adjust the level of blue and red by pressing left or right button to reach the reasonable results of white balance.

Return: Select Return and press Enter button to return to the previous interface.

2.6 Day & Night

Select Day & Night and press Enter button to setup its mode and smart IR.

Mode: Three options: Auto, Color, B/W. User can select it by pressing Right button.

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Auto: When selecting Auto, the camera will change into the Daytime or B/W mode at night so that user can get the best and clearest images.

Select Auto and press Enter button to enter into the auto setup interface.

- Delay Control:** Setup Day-Night switching time. The default delay time is 5s. Press Left/Right button to control the delay time.

- Day→Night:** Set illumination limits from color to B/W.

- Night→Day:** Set illumination limits from B/W to color.

Color: Return to the Mode setup interface and press Right button to select this mode.

B/W: Select this mode and press Enter button to setup Burst. Press Right/Left button to select on/off. If you want to obtain the standard B/W signal, please select off.

Smart IR: Select smart IR and press Enter button to set On/off. When the object with IR light is captured, please enable it and then enter into its submenu for level and area setup.

2.7 Special

Press right/left button to setup language, camera title, motion, privacy and defect.

Language: There are three languages: English, CHT and CHS.

Camera title: Select it and press Enter button to select On/Off. When selecting “On”, the title edition and the position selection of the title is effective.

User can press the direction button to self-define the camera name. After selecting the single letter, number or symbol, please press Enter button to go into the camera title position setup. User can press the direction button to set up.

Mirror: Mirror the current image. There are three kinds of mirror: Rotate, Mirror and Flip.

Motion: Select Motion and press Left/Right button to select On/Off. Select On and press Enter button to set up motion.

- **Select:** There are three areas to set up.
- **Display:** Press Right/Left button to select On/Off. Select on and press Enter button to set its size and position.
- **Sensitivity:** Press Left or Right button to adjust the sensitivity of the detection area.

- **Motion view:** If enabled, there will be some red square appearing when there are something moving.

- **Default:** Reset all settings of Motion to the default value.

- **Return:** Return to the previous interface.

Privacy: If a user wants to mask some areas, please select On and press Enter button to go into the privacy setup interface.

- **Select:** There are 8 areas to select.

- **Display:** Display the area size and position.

- **Color:** There are 16 colors to select for the area.

- **Default:** Reset all settings of Privacy to the default value.

- **Return:** Return to the previous interface.

Defect: Including Live DPC, Level, Static DPC, Start and Level settings.

- **Live DPC:** The default setting is Auto. When selecting it, the system will automatically check the defect point.

There is no need for you to set up the level. Push left/right to select On/Off.

- **Level:** Level of live Defect Point Correction.

- **Static DPC:** Press Left/Right to select On/Off.

- **Level:** Level of Static Defect Point Correction.

- **Return:** Return to the previous interface.

2.8 Image Adjust

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Select Image Adjust and press Enter button to go into Image Adjust interface.

User can setup 3D NR, sharpness, brightness, Gamma, blue gain, red gain, lens shading and NTSC/PAL.

3D NR: Select it and press Left/Right button to increase or decrease the NR level. The higher the level is, the less the noise is.

Sharpness: Press Left/Right button to setup the value of sharpness about the image profile.

Brightness: Press Left/Right button to setup the value of brightness.

GAMMA: Setup the value of GAMMA.

Blue Gain: Press Left/Right button to increase or decrease the value of blue.

Red Gain: Press Left/Right button to increase or decrease the value of red.

Lens Shading: Press Left/Right button to select On/Off.

NTSC/PAL: Press Left/Right button to select NTSC or PAL.

Return: Return to the previous interface or Exit menu setup.

2.9 Reset

This function is reset all setups to the default status. If parameters of the camera are out of order and the camera cannot display images, user may use this function to reset all setups. Please select Reset and press Enter button to go into its setup interface. Then select Factory and press Enter button to reset all settings to the default factory settings. Additionally, user can also check up the version of the camera here.

Select Return to return to the menu setup interface. Press Left/Right button to select Exit to exit the menu setup interface and return to the live interface. The system will automatically save the settings.

Note: If you shut down your device but don't exit the menu setup interface, all settings set above will not be saved.

3 Specification

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Model		HD SDI Box Camera
Camera	Sensor	1/3"CMOS
	Pixel	2010 (H) x 1092 (V)
	Shutter	1/60s~1/67500s
	Min illumination	0.01LUX
	Resolution	1000TVLines
	Lens driver	DC driver
	Lens port	C/CS port
	White balance	ATW, indoor, outdoor, manual, etc
	Day&Night	ICR
Advance	S/N ratio	>50dB
	3D NR	Support
	BLC	BLC/HLC, Area, Level, Off setup
	Image adjust	Sharpness, brightness, etc
	WDR	100dB
	Mirror	Rotate, mirror, flip
	Lens shading	Support
Video	Size	1080P (1920 x 1080)
	Frame	30fps (60Hz), 25fps (50Hz)
Port	Video out	1-ch SDI(1.0Vp-P, 75ohm)
	Alarm out	Support
Working environment	Power supply	DC12V
	Temperature	-10°C ~ 50°C
	Humidity	10%-90%
	Dimension	W70mmxD145mmxH55mm
	Weight	400g (net weight)

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